

PROJECT DESCRIPTION

I. GENERAL

This project involves the re-alignment MD 28 and extension of Norbeck Rd.. The existing traffic control signal at the intersection of MD 182 (Layhill Rd.) and MD 28 (Norbeck Rd.) in Montgomery County shall be reconstructed and the interconnect cable shall be maintained throughout the reconstruction. There will be three temporary signals installed during the Maintenance of Traffic Stages

MD 182 (Layhill Rd) / Norbeck Rd. is considered the main line during the Maintenance of Traffic Phases and is assumed to run in an east-west direction. The mainline will switch to Norbeck Road for the ultimate signal.

II. INTERSECTION OPERATION

A. Norbeck Rd. Temporary Connection and (MD 182) Layhill Rd. (M.O.T. Phase 1, Temporary Signal * 1).

1. The intersection shall operate as a three-phase, semi-actuated-mode with the Layhill Rd. approaches operating concurrently. The temporary connection of Norbeck Rd. shall operate alone. Video detector cameras shall be installed for detection.

2. A full-traffic-actuated, eight-phase controller with L.A.U. and L.A.U. panel with all necessary equipment and harnesses housed in a NEMA size "5" pole-mounted cabinet shall be installed at the intersection.

B. Norbeck Rd. Relocated and Layhill Rd. Detour: (M.O.T. Phase 2, Stage 2, Temporary Signal * 2).

1. The intersection shall operate as a three-phase, Semi-actuated-mode with the Layhill Rd. approaches operating concurrently. The Norbeck Rd. approach shall operate alone. Video detector cameras shall be installed for detection.

2. A full-traffic-actuated, eight-phase controller with L.A.U. and L.A.U. panel with all necessary equipment and harnesses housed in a NEMA size "5" pole-mounted cabinet shall be installed at the intersection.

C. Norbeck Rd. Extended and Layhill Rd. (M.O.T. Phase 2, Stage 1&2, Temporary Signal * 3).

1. The intersection shall operate as a three-phase, semi-actuated-mode with the Layhill Rd. approaches operating concurrently. The Norbeck Rd. approach shall operate alone. Video detector cameras shall be installed for detection.

2. A full-traffic-actuated, eight-phase controller with L.A.U. and L.A.U. panel with all necessary equipment and harnesses housed in a NEMA size "6" base-mounted cabinet shall be installed at the intersection.

D. MD 28/ Norbeck Rd. and MD 182 (Layhill Rd.) (Ultimate Signal)

1. The intersection shall operate in a six-phase, semi-traffic-actuated mode with Exclusive/ Permissive left turns on MD 28/ Norbeck Rd. MD 182 (Layhill Rd.) approaches shall operate together. Video detector cameras shall be installed for detection and sampling stations on all approaches. A pushbutton actuated pedestrian movement shall be provided to cross the east leg Norbeck Rd.

2. The full-traffic-actuated, eight-phase controller with L.A.U. and L.A.U. panel with all necessary equipment and harnesses housed in a NEMA size "6" base-mounted cabinet shall be maintained.

III. SPECIAL NOTES:

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Mr. Bob Gonzales at (240) 777-8761 seventy-two hours in advance of the intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY D.O.T. AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	QUANTITY	DESCRIPTION
8088	1 EA.	R3-5R "RIGHT TURN ONLY" sign (30" x 36") span wire mounted.
8088	2 EA.	R10-12 " LEFT TURN YIELD ON GREEN BALL" (36" x 42") mast arm mounted.
8088	2 EA.	D3-2 " Norbeck RD." (variable x 18") mast arm mounted.
8088	2 EA.	D3-2 " Layhill RD." (variable x 18") mast arm mounted.
8103	1 EA.	27' steel pole with a 50' mast arm (Note: four anchor bolts 1 3/4" x 90").
8103	2 EA.	27' steel pole with a 60' mast arm (Note: four anchor bolts 2" x 90").
8103	1 EA.	27' steel pole with a 70' mast arm (Note: four anchor bolts 2" x 90").
8122	11 EA.	12" one-way, three-section (R,Y,G) signal head having proper span wire hangers, balance adjusters and tunnel visors.
8122	8 EA.	12" one-way, three-section (R,Y,G) signal head with adjustable brackets for mast arm mounting and tunnel visors.
8122	4 EA.	12" one-way, five-section (R,Y,YA,G,GA) signal head with adjustable brackets for mast arm mounting and tunnel visors.
8124	2 EA.	12" one-way, two-section (WK,DW) symbolic pedestrian signal head with adjustable brackets for pole mounting and cutaway visors.
8126	2 EA.	Pedestrian pushbutton with educational sign," PUSHBUTTON FOR WALK SIGNAL" pole mounted.
8128	1 EA.	Splice cabinet with telemetry equipment pole mounted.
8129	1 EA.	Eight-phase, full-traffic-actuated, solid state digital controller with L.A.U., L.A.U. panel and associated harnesses housed in a NEMA size "6" base-mounted cabinet.
8130	2 EA.	Eight-phase, full-traffic-actuated, solid state digital controller with L.A.U., L.A.U. panel and associated harnesses housed in a NEMA "5" pole-mounted cabinet.
NEG.	8 EA.	Video detector camera with lighting arm mounted hardware.
NEG.	2 EA.	Video detector camera with mast arm mounted hardware.
* NEG.	2 EA.	Change hardware on video detector camera from lighting arm to mast arm mounted.

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	QUANTITY	DESCRIPTION
2002	3 C.Y.	Test pit excavation.
8001	19 C.Y.	Concrete foundation.
8010	120 L.F.	3" galvanized steel electrical conduit (riser).
8019	35 L.F.	2" polyvinyl chloride electrical conduit (Schedule 80)-trenched.
8023	70 L.F.	3" polyvinyl chloride electrical conduit (Schedule 80)-trenched.
8027	46 L.F.	4" polyvinyl chloride electrical conduit (Schedule 80)-tenched.
8041	3 Each	Control and distribution equipment.
8043	5 Each	Ground rod 3/4" dia. x 10' length with clamp.
8048	130 L.F.	6-pair telemetry cable-self supporting overhead.
8054	220 L.F.	Install County supplied telemetry cable-self-supporting (overhead).
8064	250 L.F.	2-conductor electrical cable (No. 14 AWG).
8065	2490 L.F.	3-conductor electrical cable (No. 14 AWG)
8066	1110 L.F.	5-conductor electrical cable (No. 14 AWG).
8067	2930 L.F.	7-conductor electrical cable (No. 14 AWG).
8070	850 L.F.	2-conductor electrical cable (No. 12 AWG), copper type TC.
8075	470 L.F.	1-conductor electrical cable (No. 6 AWG), stranded bare copper ground wire.
8078	210 L.F.	3-wire electrical cable (No. 4 AWG).
* 8095	8 Each	20' lighting arm mounted.
8097	6 Each	250 watt HPS luminaire with photocell.
* 8101	9 Each	Wood pole - Class II (40').
8109	7 Each	3" weatherhead.
8113	950 L.F.	3/8" steel span wire.
8119	18 Each	Back guy.

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.


ITEM NO.	QUANTITY	DESCRIPTION
* 8120	2 Each	Adjust back guy.
* 8141	1 Each	Relocate wood pole.
* 8142	5 Each	Relocate signal head.
* 8144	1 Each	Relocate lighting arm and luminaire.
8147	500 L.F.	Transfer existing overhead communication cable.
8148	1 Each	Removal and salvage of signs less than 50 S.F.
8151	8 Each	Removal and salvage of lighting arm.
8152	2 Each	Removal of electrical service.
8153	10 Each	Removal of span and associated wiring.
8155	9 Each	Removal and salvage of wood pole.
8157	1 Each	Removal and salvage of steel pole with mast arm including foundation.
* 8160	3 Each	Removal and salvage of cabinet, pole mounted.
8161	8 Each	Removal of handbox.
8162	22 Each	Removal and salvage of traffic signal head.
* NEG.	1 Each	Relocate existing electrical service.
* NEG.	1 Each	Relocate lighting arm.
* NEG.	6 Each	Relocate video detector cameras.
NEG.	2 Each	3" LB into bottom plate.
NEG.	5 Each	Removal and salvage 250 watt HPS luminaire.
NEG.	2230 L.F.	Coaxial electrical cable for video camera.

* Identifies the equipment that will be re-used during the Maintenance of Traffic Phases 1-3.

NOTE: The pay item for the 12 pair voice grade communication cable will be included in the quantities for Norbeck Rd. & Norbeck Rd. Extended.

GENERAL INFORMATION SHEET 2



 MARYLAND DOT - STATE HIGHWAY ADMINISTRATION <i>Office of Traffic & Safety</i> TRAFFIC ENGINEERING DESIGN DIVISION MD 28 / NORBECK ROAD AND MD 182 (LAYHILL ROAD)			
DRAWN BY: MILES KY	COUNTY: MONTGOMERY	TS NO. 2642	SHEET NO. 6 OF 6
CHECK BY: RRZ VAA	LOG MILE: 15018204.31	T.J.M.S. NO.	
DATE: 09/11/00	F.A.P. NO.		
SCALE: N/A	S.H.A. NO. ?		